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Wendy W. Koba
P.O. Box 556
Springtown, PA 18081

EXAMINER	
DEHGHAN, QUEENIE S	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/687,454
Filing Date: October 16, 2003
Appellant(s): HOMA, DANIEL SCOTT

Wendy W. Koba
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 20, 2007 appealing from the Office action mailed March 1, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US PG Pub 2002/0150365	Antos et al.	10-2002
US 6,532,774	Zhang et al.	3-2003
US PG Pub 2003/0213268	Homa	11-2003
Us 6,053,013	Oh et al.	4-2000
US 4,310,340	Sarkar	1-1982
US 5,735,921	Araujo et al.	4-1998
US 4,627,160	Herron et al.	12-1986

Ishikawa, Shinji "Production of Optical Fiber Preform" Japan Patent Abstract, (July 13, 1990)

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1-4, 6-7, 10-12 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Antos et al. (2002/0150365). Regarding claims 1, 6 and 7, Antos et al. disclose a process for making an optical preform comprising, providing an optical

preform tube, depositing a porous unsintered soot layer comprising SiO_2 and GeO_2 ([0016]) within the inner surface of the tube ([0022]), exposing the soot layer to a flow of metal halide in an oxygen free ambient for a period of time sufficient to eliminate the presence of oxygen defects in the soot layer ([0007], [0008], [0018], [0034], [0043]), sintering the metal halide treated soot layer in an oxygen free ambient to form a glass layer ([0017], [0030], [0033]), and collapsing the sintered preform tube to form a solid core optical fiber preform ([0017]).

3. Regarding claim 2, Antos et al. further disclose depositing a clad silica layer as well as a core layer ([0022]).

4. Regarding claims 3 and 4, Antos et al. disclose the option of depositing a cladding layer comprised of a depressed index component such as fluorine ([0015]).

5. Regarding claims 10 and 11, Antos et al. disclose possible metal halides as $GeCl_4$ or $SiCl_4$ ([0019]).

6. Regarding claim 12, Antos et al. disclose performing the metal halide treatment for a time period at least 10 minutes to at most 10 hours ([0018]).

7. Regarding claim 14, Antos et al. disclose performing the metal halide treatment at a temperature range of 1000°C to 1150°C ([0018]).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

> the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 5, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antos et al. (2002/0150365), as applied to claim 1 above, in view of Zhang et al. (6,532,774). Antos et al. fail to disclose a soot deposition temperature. Zhang et al. teach of an example of MCVD where soot is deposited at a lower temperature of 1650°C (col. 24 lines 60-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the deposition temperature of Zhang et al. in the process of Antos et al. because higher temperatures may result in partial sintering of the soot deposited.

10. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antos et al. (2002/0150365), as applied to claim 1 above, in view of Ishikawa et al. (English Abstract of JP 02180729). Antos et al. disclose performing the metal halide treatment in the presence of ambient containing He ([0043]), but do not mention using an ambient of He and N_2 for either the metal halide treatment or sintering steps. Ishikawa et al. teach treating a soot preform with a metal halide in the ambient of He and N_2 as well a sintering in an ambient of He and N_2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the ambient of He and N_2 of Ishikawa et al. in the process of Antos et al. as a viable alternative to prevent the introduction of oxygen into the preform during treatment and sintering.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Antos et al. (2002/0150365), as applied to claim 1 above, in view of Homa (2003/0213268).

Antos et al. fail to disclose a sintering temperature of approximately 2200°C. Homa teach sintering a MCVD preform at a temperature of 2100°C ([0034]). 2100°C is interpreted to be approximately 2200°C (±10%). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the sintering temperature of Homa in the process of Antos et al. to ensure complete sintering.

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Antos et al. (2002/0150365), as applied to claim 1 above, in view of Oh et al. (6,053,013). Antos et al. fail to disclose collapsing in an atmosphere of Cl_2 and/or He. Oh et al. teach a MCVD process where the preform tube is collapsed while supplying Cl_2 and He. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the ambient of Cl_2 and He of Oh et al. in the collapsing step of Antos et al. to prevent contamination at the high temperatures of collapsing tubes.

13. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Antos et al. (2002/0150365), as applied to claim 1 above, in view of Sakar (4,310,340). Antos et al. fail to suggest a temperature for the collapsing step. Sakar teaches collapsing a MCVD preform tube at a temperature of 2200°C. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the high collapsing temperature of Sakar in the collapsing step of Antos et al. in order for silica tubes to collapse, as taught by Sakar.

14. Claims 19 and 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Antos et al. (2002/0150365) in view of Ishikawa et al. (English Abstract of JP 02180729), Araujo et al. (5,735,921), and Herron et al. (4,627,160). Antos et al.

disclose a process for making an optical preform comprising, providing an optical preform tube, depositing a porous unsintered soot layer comprising SiO_2 and GeO_2 ([0016]) within the inner surface of the tube ([0022]), exposing the soot layer to a flow of metal halide in an oxygen free ambient for a period of time sufficient to significantly reduce the presence of oxygen defects in the soot layer ([0007], [0008], [0018], [0034], [0043]), sintering the metal halide treated soot layer in an oxygen free ambient to form a glass layer ([0017], [0030], [0033]), and collapsing the sintered preform tube to form a solid core optical fiber preform ([0017]). Antos et al. further disclose depositing a clad silica layer as well as a core layer ([0022]). However, Antos et al. fail to disclose sintering in an environment of $SiCl_4$, He, and H_2. Ishikawa et al. teach sintering in ambient of $SiCl_4$, He and N_2. Furthermore, Arjaujo et al. teach the use of Helium and H_2 in the consolidation of optical performs (col.7 lines 2-3). Herron et al. also teach a sintering process that is typically done in either N_2 or H_2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use N_2 or H_2 interchangeably in the consolidation step comprising $SiCl_4$, He of Ishikawa et al., as taught by the examples of Arjaujo et al. and Herron et al. due to the their ability to create a reducing atmosphere. Additionally, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the ambient of $SiCl_4$, He and N_2 of Ishikawa et al. and H_2 of Araujo et al. and Herron et al. in the process of Antos et al. as a viable alternative to prevent the introduction of oxygen into the preform during treatment and sintering.

(10) Response to Argument

The applicant asserts that the Antos reference does not disclose the absence of oxygen during the sintering process. First, the applicant points to paragraph [0020] and notes a less than stoichiometric amount of oxygen is present. Paragraph [0020] was referring to a soot deposition step and not a sintering step.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., eliminating oxygen from the ambient) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir.1993). The applicant points to paragraph [0034] and notes that Antos does not require all that oxygen be eliminated from the ambient. The elimination of oxygen from the ambient is not a claimed method step of the present invention.

In response to the applicant's argument that example 2 presents a furnace heated to 1000°C where there is oxygen present in the ambient. This appears to be mere speculation. As already noted by the applicant, Example 2 presents the flowing of a metal halide. The flowing of the metal halide is in an ambient of He, which is an oxygen-free ambient.

The remaining arguments presented by the applicant points to same arguments discussed above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Queenie Dehghan

STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

Conferees:

Steven Griffin

Jennifer Kolb-Michener

Romulo De Imendo
Acting Appeal Conferee